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REMARKS

This amendment is responsive to the Office Action of May 29, 2008. Reconsideration and allowance of claims 1-13 are requested.

The Office Action

Claims 1-11 and 13 stand rejected under 35 U.S.C. § 102 as being anticipated by Gondek (US 2003/0026495).

Claim 12 stands rejected under 35 U.S.C. § 103 as being unpatentable over Gondek in view of Roth (US 5,805,236).

The Present Amendment Should Be Entered

The present amendment should be entered as requiring no further search or consideration.

The amendments to **claims 4 and 5** should be entered as addressing potential antecedent basis issues. That is, the language of claims 4 and 5 has been amended to use the same words as parent claim 1 to resolve a potential 35 U.S.C. § 112, second paragraph issue. Because the amendments to claims 4 and 5 go only to matters of form and not to substance, it is submitted that the amendments to claims 4 and 5 raise no issues that would require further search or consideration.

Method **claim 11** has been placed in independent form, including all of the method limitations of its parent claim 1. Because a dependent claim is read as including the subject matter of its parent claim, it is submitted that placing claim 11 in independent form including all of the method steps of parent claim 1 would require no further search or consideration.

Accordingly, it is submitted that the amendment to claim 11 should be entered as raising no issues that would require further search or consideration.

The Gondek Reference

Gondek, at paragraphs [0016]-[0027] sets forth a relatively basic, conventional filtering technique for selecting which of a plurality of preselected filters are applied to each pixel **105** of an image. Gondek has a filter database **110** which stores thirteen predefined filters (paragraph [0019], lines 4-5). Each of these filters is

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used at specific times, such as to smooth or average out noise, enhance edges, and other situations as discussed in paragraph [0019] of Gondek. The thirteen predefined filters of Gondek are described in Figure 4 and paragraph [0023].

In order to decide which of the thirteen predefined filters should be applied,. a filter selection module 106 analyzes the pixels which surround input pixel 105 and selects an appropriate one of the thirteen preset filters (see paragraphs [0016]-[0017]).

Filtering the pixel 105 typically involves replacing the pixel 105 with a weighted combination of the window 104 of surrounding pixels and itself. For example, filter 3 of Gondek (Table 4) weights itself 100% and the surrounding pixels 0%. The filter O might weight itself 0% and the light surrounding pixels equally. Filter 7 could push the value pixels 105 to an average of the pixels in the vertical column(s) to it sright or the pixels in the vertical column(s) to its left in order to make a vertical edge sharper.

Thus, in Gondek, only predefined filters are applied.

The Present Application

This description of aspects of the present application is provided only to further the Examiner's general understanding, and is not to be construed as limiting the claims.

The present application discloses a technique in which custom filters or filter kernels are designed for each pixel of the image.

Specifically, in the present application, block 5 determines the probability (Fi) that each pixel represents one of m types of different features. Based on these probabilities, a combining operator 10 generates a vector (VC). The components of the vector are based on the probabilities that the pixel has each of the m types of features of the group of features. Based on this vector, a synthesizing means designs a custom filter or filter kernel by combining a plurality of preselected filter kernels or filters, with the weighting with which these preselected filter kernels are combined being determined by the vector (VC).

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The Claims Are Not Anticipated By Gondek

It is axiomatic that for anticipation, the alleged anticipatory reference must disclose every claimed element in the claimed relationships.

First, **claim 1** calls for estimating at each image point a probability measure Fi of the presence of a type of feature. In Gondek, the filter selection **106** determines from the pixel window **104** surrounding the image point to be filtered what type of feature the pixel represents, hence, which of the preset filters should be applied. There is no disclosure in Gondek of determining a probability measure to determine a probability that each image point **105** is any of the various selectable predefined feature types. Gondeck selects one.

Second, claim 1 calls for determining weighting control vector (VC) from the probability measures. There is no disclosure in Gondek of generating a weighting control vector based on probabilities. Again, Gondek selects one filter.

Third, claim 1 calls for a synthesizing means for generating filter kernels at each image point adapted to the features of interest. Gondek does not generate filter kernels. Rather, Gondek has thirteen predefined filter kernels and selects one of the thirteen predefined filter kernels for each image point. Gondek discloses no synthesizing means and does not synthesize or generate a filter kernel for each image point.

Fourth, claim 1 calls for the generating filter kernels to be controlled by the weight control vector (VC). Gondek not only has no weighting control vector, Gondek further does not generate filter kernels based on a weighting control vector.

Claim 2 calls for a combining means having an output for weighted adaptive kernels (H) adapted to the type of image features. Gondek does not disclose outputting weighted adaptive filter kernels or filters. Rather, Gondek outputs one of the thirteen predefined filters or filter kernels.

Claim 3 calls for isotropic and anisotropic filter means to be applied independently of the type of image features and for those filtered outputs to be combined for each image point. Gondek filters each image point with one of the thirteen predefined images to generate the completed filtered pixel. Gondek does not disclose filtering an image point with a plurality of filters and combining the filtered outputs for each image point.

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Claim 3 further calls for the combining to be adapted by the weighting control vector (VC). Gondek does not disclose combining differently filtered outputs, weighting the filtered outputs, or adapting the combining of the outputs using a weighting control vector.

Claim 4 calls for the analyzing means to determine the probability measure of each of a plurality of image features. By contrast, Gondek selects one of the predefined image features and applies the corresponding predefined filter. Gondek does not disclose outputting a probability of each type of potential image feature or a probability of one of the thirteen predefined filters.

Claim 5 calls for the components of the control vector to be based on the probability measures for the presence of different types of features. Gondek selects one of the thirteen predefined filters and does not generate a control vector, much less a vector whose components are based on the probabilities of the presence of different types of features.

Claim 7 calls for outputting an adaptive kernel (H) which is adapted by weighting parameters defined by the control vector (VC). Gondek selects one of the thirteen predefined filters. There is no suggestion in Gondek of a control vector, much less of outputting an adaptive filter kernel by weighting parameters defined by such a weighting control vector.

Claim 8 calls for applying a number of different filtering means independently of the types of the features examined in the image. By contrast, Gondek applies one of the thirteen predefined filters and the one applied filter is dependent on the type of the feature.

Claim 9 calls for a weighted sum of the different filtering means. Gondek filters with one of the predefined filters. There is no disclosure of a weighted sum of filters.

Accordingly, it is submitted that **claim 1 and claims 2-10 and 12** are not anticipated by Gondek and that **claim 12** is patentable by virtue of its dependency on claim 1.

Claim 11 calls for estimating at each image point, a probability measure of the presence of a type of feature. For each image point, Gondek selects one type of

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feature and the corresponding one of the predefined filters. There is no disclosure of estimating a probability measure.

Claim 11 calls for determining a weighting control model yielding a weighting control vector from the probability measure. Gondek does not disclose a weighting control vector or a weighting control model.

Claim 11 calls for generating filter kernels at each image point adapted to the type of features of interest, which generation of filter kernels is controlled by the weighting control vector. By contrast, Gondek selects one of a plurality of predefined filter kernels. Gondek does not generate filter kernels, much less generate filter kernels under the control of a weighting control vector. Accordingly, it is submitted that claim 11 is not anticipated by Gondek.

CONCLUSION

For the reasons set forth above, it is submitted that claims 1-13 are not anticipated by and distinguish patentably over the references of record. An early allowance of all claims is requested.

Respectfully submitted,

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